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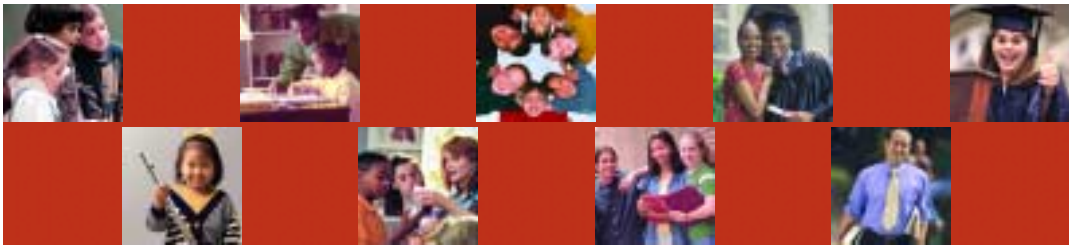
the condition of education 2003



INDICATOR 12

Poverty and Student Mathematics Achievement

The indicator and corresponding tables are taken directly from *The Condition of Education 2003.* Therefore, the page numbers may not be sequential.

Additional information about the survey data and supplementary notes can be found in the full report. For a copy of *The Condition of Education 2003*, visit the NCES web site (http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2003067) or contact ED PUBs at 1-877-4ED-PUBS.

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Academic Outcomes

Poverty and Student Mathematics Achievement

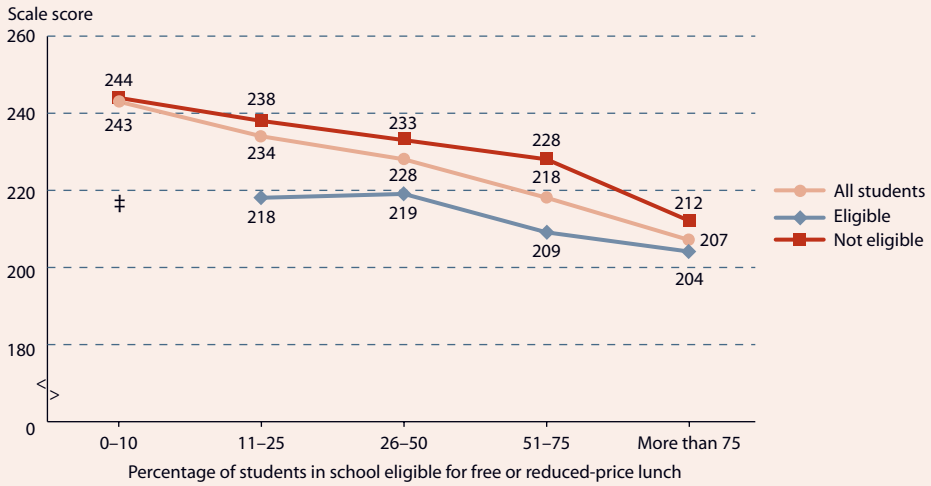
Compared with students in low-poverty public schools, students in high-poverty public schools have lower achievement scores in 4th-grade mathematics.

The National Assessment of Educational Progress (NAEP) collects background information on students, teachers, and schools, permitting analysis of student achievement relative to the poverty level of public schools, measured as the percentage of students eligible for free or reduced-price lunch. In 2000, higher levels of students in schools eligible for subsidized lunch were generally associated with lower scores on the 4th-grade mathematics assessment. Students in schools with more than 50 percent of their students eligible for free or reduced-price lunch had a lower average score than students in schools with a quarter or fewer of their students eligible for the program (see supplemental table 12-1).

This difference in achievement by school-level poverty exists whether or not the students were personally eligible for the school lunch program. For example, among students who were not personally eligible for the school lunch program, students in schools with more than 50 percent of their students eligible for the program had a lower average score than those in schools with a quarter or fewer eligible. Among those eligible for the school lunch program, the average score of students in schools with more than 75 percent of students eligible was lower than the score for students in schools with 11–50 percent of students eligible.

Certain characteristics of the highest poverty schools (more than 75 percent of students eligible for subsidized lunch) are evident. Relative to the total 4th-grade population, there was a lower percentage of White students and a higher percentage of Black and Hispanic students in the highest poverty schools in 2000. The highest poverty schools had higher rates of student absenteeism and a lower percentage of their students with a "very positive" attitude toward academic achievement than schools with the least poverty (i.e., those with 10 percent or fewer eligible). In addition, the highest poverty schools in 2000 reported less parental involvement than schools with the least poverty. For example, the highest poverty schools were more likely to report less than 50 percent parent participation in open houses or back-to-school nights than schools with the least poverty (see supplemental table 12-2).

POVERTY AND ACHIEVEMENT: Average scale score of public school students in 4th-grade mathematics, by the percentage of students in the school eligible for free or reduced-price lunch and whether the student was eligible for free or reduced-price lunch: 2000



‡Reporting standards not met (too few cases).

SOURCE: U.S. Department of Education, NCES, National Assessment of Educational Progress (NAEP), 2000 Mathematics Assessment, previously unpublished tabulation (October 2001).

FOR MORE INFORMATION:
Supplemental Notes 1, 4
Supplemental Tables 12-1, 12-2

Poverty and Student Mathematics Achievement

Table 12-1. Average mathematics scale score and percentage of public school students in 4th-grade mathematics, by percentage of students in the school eligible for free or reduced-priced lunch and selected student characteristics: 2000

Student characteristic	10 percent or less		11–25 percent		26–50 percent		51–75 percent		More than 75 percent		Total population	
	Score	Percent	Score	Percent	Score	Percent	Score	Percent	Score	Percent	Score	Percent
Total	**243**	**100.0**	**234**	**100.0**	**228**	**100.0**	**218**	**100.0**	**207**	**100.0**	**226**	**100.0**
Language other than English spoken in the home												
Never	244	66.2	235	67.8	230	65.0	220	63.4	207	52.1	228	62.9
Sometimes	243	28.4	236	25.5	228	28.9	217	27.8	209	34.6	226	29.0
Always	240	5.4	219	6.6	219	6.1	209	8.8	208	13.3	215	8.1
Race/ethnicity[1]												
Black	‡	3.0	215	6.8	211	13.3	203	19.0	201	34.4	205	15.1
White	245	83.9	237	81.8	233	70.3	226	55.7	217	31.9	235	64.1
Hispanic	223	6.1	218	8.2	221	13.1	209	21.3	203	27.8	211	15.7
Student is eligible for free or reduced-price lunch												
Eligible	‡	6.6	218	17.5	219	33.8	209	55.6	204	80.5	210	40.6
Not eligible	244	93.4	238	82.5	233	66.2	228	44.4	212	19.5	236	59.4

‡Reporting standards not met (too few cases).

[1]Black includes African American and Hispanic includes Latino. Race categories exclude Hispanic origin unless specified.

NOTE: See *supplemental note 4* for more information on the National Assessment of Educational Progress (NAEP). Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, NCES, National Assessment of Educational Progress (NAEP), 2000 Mathematics Assessment, previously unpublished tabulation (October 2001).

Poverty and Student Mathematics Achievement

Table 12-2. Percentage of 4th-grade students in the school eligible for free or reduced-priced lunch, by selected school and teacher characteristics of public schools: 2000

School and teacher characteristics	Students in school eligible to receive free or reduced-price lunch: 10 percent or less	11–25 percent	26–50 percent	51–75 percent	More than 75 percent	Total population
Academic orientation						
Average student attitude in school toward achievement						
Very positive	79.5	45.7	34.1	27.9	28.5	43.5
Somewhat positive	20.5	54.3	65.9	61.5	65.3	53.2
Somewhat/very negative	#	#	#	10.6	6.2	3.3
Teacher characteristics						
Teacher is certified in elementary mathematics[1]						
Yes	27.1	39.6	37.6	31.2	22.0	30.3
No	44.1	38.6	38.8	51.7	63.7	47.7
Number of years spent teaching mathematics						
2 years or less	12.9	11.9	13.0	14.1	15.5	14.0
3–5	17.7	14.4	13.9	22.5	17.0	17.1
6–10	11.2	13.4	23.3	20.0	19.3	18.0
11 or more	58.2	60.3	49.9	43.4	48.2	50.9
School climate and discipline						
Physical conflicts in school among students						
Serious/moderate	2.3	9.5	11.0	21.5	22.0	12.7
Minor	50.8	43.1	66.9	54.4	65.3	56.3
Not a problem	46.9	47.4	22.1	24.1	12.7	31.0
Percentage of students absent on a given day						
0–2	49.5	22.2	26.9	25.8	12.7	27.8
3–5	50.5	73.3	57.3	64.2	65.1	61.5
More than 5	#	4.5	15.8	10.0	22.2	10.7
Percentage of teachers who left before the end of the school year						
0	94.1	89.5	69.1	70.6	64.2	76.9
1–2	5.9	9.2	21.9	25.2	30.5	19.2
More than 2	#	1.4	9.0	4.2	5.3	3.9
Enrollment						
Less than 300	15.0	7.4	14.0	13.5	17.3	13.7
300–1,000	84.3	87.6	83.7	82.9	73.5	82.1
More than 1,000	0.7	5.0	2.3	3.6	9.2	4.2
Location						
Central city	9.3	20.7	30.7	27.1	56.2	29.9
Urban fringe/large town	72.7	57.9	39.6	29.1	26.1	45.6
Rural/small town	18.0	21.3	29.7	43.8	17.7	24.5

See notes at end of table.

Poverty and Student Mathematics Achievement

Table 12-2. Percentage of 4th-grade students in the school eligible for free or reduced-priced lunch, by selected school and teacher characteristics of public schools: 2000—Continued

School and teacher characteristics	Students in school eligible to receive free or reduced-price lunch: 10 percent or less	11–25 percent	26–50 percent	51–75 percent	More than 75 percent	Total population
School resources and social support						
Percentage of parents who participate in open house or back-to-school night						
0–50	5.2	12.7	17.7	23.7	29.2	17.4
51–75	11.5	12.2	38.9	45.8	29.1	28.1
More than 75	83.3	75.1	43.4	30.6	41.7	54.5
Percentage of parents who participate in parent-teacher organizations						
0–25	21.0	29.8	61.6	68.9	70.5	50.2
26–50	18.7	32.0	18.8	20.6	24.3	22.9
More than 50	60.3	38.2	19.6	10.6	5.2	26.9
Percentage of parents who participate in parent-teacher conferences						
0–50	1.1	1.0	9.0	19.5	21.5	10.1
51–75	1.7	18.0	23.1	30.1	27.1	19.6
More than 75	97.2	81.0	67.9	50.4	51.4	70.3
Percentage of students who received Title I funds						
0–10	92.2	76.0	55.2	17.0	1.2	48.7
11–25	7.8	19.7	26.3	9.9	11.3	14.5
26–50	#	4.4	11.4	10.9	7.5	6.7
51–75	#	#	#	9.0	1.3	2.0
More than 75	#	#	7.2	53.2	78.6	28.1

#Rounds to zero.

[1]The questionnaire also included a category for "certification not offered in the state."

NOTE: Detail may not sum to totals because of rounding. See *supplemental note 4* for more information on the National Assessment of Educational Progress (NAEP). See *supplemental note 1* for information on type of location.

SOURCE: U.S. Department of Education, NCES, National Assessment of Educational Progress (NAEP), 2000 Mathematics Assessment, previously unpublished tabulation (October 2001).

Poverty and Student Mathematics Achievement

Table S12. Standard errors for the average scale score of public school students in 4th-grade mathematics, by the percentage of students in the school eligible for free or reduced-price lunch and whether the student was eligible for free or reduced-price lunch: 2000

Characteristic	0–10 percent	11–25 percent	26–50 percent	51–75 percent	More than 75 percent
All students	**1.8**	**1.7**	**1.7**	**1.6**	**1.6**
Student is eligible for free or reduced-price lunch					
Eligible	‡	4.7	2.0	1.8	1.4
Not eligible	2.2	1.4	2.1	1.8	5.4

‡Reporting standards not met (too few cases).

SOURCE: U.S. Department of Education, NCES, National Assessment of Educational Progress (NAEP), 2000 Mathematics Assessment, previously unpublished tabulation (October 2001).

Poverty and Student Mathematics Achievement

Table S12-1. Standard errors for the average mathematics scale score and percentage of public school students in 4th-grade mathematics, by percentage of students in the school eligible for free or reduced-priced lunch and selected student characteristics: 2000

Student characteristic	10 percent or less		11–25 percent		26–50 percent		51–75 percent		More than 75 percent		Total population	
	Score	Percent	Score	Percent	Score	Percent	Score	Percent	Score	Percent	Score	Percent
Total	**1.8**	†	**1.7**	†	**1.7**	†	**1.6**	†	**1.6**	†	**1.0**	†
Language other than English spoken in the home												
Never	1.7	2.7	1.8	2.3	1.8	1.8	1.9	1.9	2.0	3.3	1.0	1.0
Sometimes	3.2	2.1	2.0	1.9	2.9	1.8	2.4	1.5	2.2	2.3	1.4	0.9
Always	10.4	1.1	8.4	1.0	3.3	0.8	3.2	1.1	3.0	1.7	2.3	0.5
Race/ethnicity												
Black	‡	0.8	7.3	1.5	2.4	2.2	2.5	2.4	1.6	3.4	1.7	0.2
White	1.7	1.7	1.3	2.1	1.9	2.5	2.0	3.1	3.8	3.7	1.1	0.4
Hispanic	5.4	0.9	5.2	1.1	3.4	1.4	2.8	2.1	2.4	2.1	1.6	0.3
Student is eligible for free or reduced-price lunch												
Eligible	‡	1.3	4.7	1.8	2.0	2.2	1.8	2.1	1.4	2.3	1.0	1.5
Not eligible	2.2	1.3	1.4	1.8	2.1	2.2	1.8	2.1	5.4	2.3	1.3	1.5

†Not applicable.

‡Reporting standards not met (too few cases).

SOURCE: U.S. Department of Education, NCES, National Assessment of Educational Progress (NAEP), 2000 Mathematics Assessment, previously unpublished tabulation (October 2001).

Poverty and Student Mathematics Achievement

Table S12-2. Standard errors for the percentage of 4th-grade students in the school eligible for free or reduced-priced lunch, by selected school and teacher characteristics of public schools: 2000

School and teacher characteristics	Students in school eligible to receive free or reduced-price lunch: 10 percent or less	11–25 percent	26–50 percent	51–75 percent	More than 75 percent	Total population
Academic orientation						
Average student attitude in school toward achievement						
Very positive	5.8	7.3	5.9	5.0	5.6	3.0
Somewhat positive	5.8	7.3	5.9	5.7	5.7	3.1
Somewhat/very negative	†	†	†	4.4	1.9	1.0
Teacher characteristics						
Teacher is certified in elementary mathematics						
Yes	4.8	6.3	5.9	5.4	3.8	2.6
No	4.5	7.3	5.1	4.5	5.0	2.7
Number of years spent teaching mathematics						
2 years or less	3.5	3.2	2.3	2.8	2.2	1.3
3–5	3.5	3.0	2.5	3.9	2.6	1.3
6–10	3.1	2.9	5.2	3.2	3.1	1.7
11 or more	5.6	4.6	4.3	5.0	4.0	2.3
School climate and discipline						
Physical conflicts in school among students						
Serious/moderate	‡	5.3	4.5	5.5	4.5	1.9
Minor	6.4	7.4	6.5	6.0	5.9	2.9
Not a problem	6.8	7.8	6.3	5.7	3.8	2.8
Percentage of students absent on a given day						
0–2	6.6	7.2	5.0	5.5	3.2	2.9
3–5	6.6	7.4	6.5	5.8	5.9	3.0
More than 5	†	2.5	5.9	4.0	5.6	1.6
Percentage of teachers who left before the end of the school year						
0	3.5	4.3	6.6	5.1	6.1	2.2
1–2	3.5	4.1	5.8	4.7	6.1	2.3
More than 2	†	‡	4.3	2.1	2.3	1.1
Enrollment						
Less than 300	5.0	4.1	3.3	3.9	4.5	1.8
300–1,000	5.0	4.6	3.6	4.4	5.0	2.1
More than 1,000	‡	2.7	1.5	2.0	3.0	0.9
Location						
Central city	3.2	6.2	4.1	4.8	4.8	1.8
Urban fringe/large town	5.6	6.8	6.2	5.2	5.3	2.4
Rural/small town	4.9	5.1	5.9	5.1	4.5	2.1

See notes at end of table.

Poverty and Student Mathematics Achievement

Table S12-2. Standard errors for the percentage of 4th-grade students in the school eligible for free or reduced-priced lunch, by selected school and teacher characteristics of public schools: 2000—Continued

School and teacher characteristics	Students in school eligible to receive free or reduced-price lunch: 10 percent or less	11–25 percent	26–50 percent	51–75 percent	More than 75 percent	Total population
School resources and social support						
Percentage of parents who participate in open house or back-to-school night						
0–50	3.1	5.7	4.3	4.9	4.5	1.7
51–75	4.7	4.6	5.4	5.8	5.1	2.2
More than 75	5.4	7.0	5.2	5.5	5.4	2.8
Percentage of parents who participate in parent-teacher organizations						
0–25	7.1	9.2	5.5	4.7	6.3	3.0
26–50	5.8	9.8	3.7	3.9	6.1	2.9
More than 50	6.6	8.0	4.7	3.2	2.5	2.5
Percentage of parents who participate in parent-teacher conferences						
0–50	‡	‡	4.1	5.0	4.2	1.5
51–75	‡	5.7	4.7	4.1	4.9	2.0
More than 75	1.9	5.9	5.5	5.7	5.6	2.4
Percentage of students who received Title I funds						
0–10	4.1	7.2	6.0	4.4	‡	3.0
11–25	4.1	6.8	5.7	3.5	2.8	2.3
26–50	†	‡	4.6	4.2	3.5	1.4
51–75	†	†	†	2.7	‡	0.6
More than 75	†	†	3.8	5.6	4.6	2.5

†Not applicable.

‡Reporting standards not met (too few cases).

SOURCE: U.S. Department of Education, NCES, National Assessment of Educational Progress (NAEP), 2000 Mathematics Assessment, previously unpublished tabulation (October 2001).